The University of Tartu

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SOCIAL CONSTRUCTION

Master's Thesis in Philosophy

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I have written the Master's Thesis myself, independently. All of the other authors' texts, main viewpoints and all data from other resources have been referred to.

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CONTENTS

1. INTRODUCTION

Consider claims of the forms

F is a social construct

and

F is socially constructed.

'*F*' here can be replaced by 'heterosexuality', 'whiteness', 'bachelorhood', 'soup', 'planethood', or any other general term, simple or complex (including general terms formed by abstraction). The instances of these schemata are furthermore, when taken at face value, about the properties expressed by the general terms in question. Let us call the instances *social construction claims*. It is unclear just what the people who make social construction claims mean (literally) by them. However, the purpose of this paper will not be to figure that out -- that would be a very difficult sociological/lexicographical task that philosophers are not well placed to carry out. Rather, I will ask this question: what, if any, are the interesting and more or less clear truths in the vicinity of those social construction claims that we feel compelled to accept? What truths should we 'rationally reconstruct' ourselves as expressing when we make these claims? According to the reconstruction I propose, they are not claims about (only) the properties they appear to be about on the surface -- bachelorhood, planethood, etc. -- but rather about the relationship between the general terms that appear in them (or perhaps the corresponding 'concepts', whatever that amounts to) and the properties they express, which are their meanings. The basic idea is that we should reconstruct '*F* is socially constructed' as expressing the claim that the relationship between '*F*' and *F* is socially constructed in a certain sense. Thus, for example, we should reconstruct ''Heterosexuality' is socially constructed' as expressing the claim that the relationship between 'heterosexuality' and heterosexuality (the property of being heterosexual) is socially constructed in that sense. The reconstruction, then, treats social construction claims as cases of mixed quotation similar to Quine's (1943: 113) famous example

(1) Giorgione was so-called because of his size,

which is more perspicuously paraphrased -- or 'rationally reconstructed' – as

(2) Giorgione was called "Giorgione" because of his size.

Similarly, I propose to paraphrase

(3) Heterosexuality is socially constructed,

as

(4) The relationship between 'heterosexuality' and *heterosexuality* is socially construction.

In turn, the sense in which the relationship between a general term (predicate) and the property that is its meaning is socially constructed when a social construction claim is true is this: the predicate could have easily had a different property as its meaning had our social practices involving the use of the predicate been slightly different. In slogan(ish) form: a meaning relationship is socially constructed when and only when it is highly unstable under counterfactual variation in social practices[1].

[1] Here, it is important to distinguish between counterfactual instability and variation in meaning over time or between speakers or communities of speakers. So, if '*F* s socially constructed' is true at time t1 then '*F*' could have easily had a different meaning at time t_1. What accounts for '*F*' easily having a different meaning at time t_1 could be that at some other time in the past t_0, '*F*' could have easily been introduced as a reference to a different paradigm object for example. Note that this is consistent with the '*F*' never being in fact associated with any other meaning with all speakers in all communities who use '*F'* associating '*F*'. This will become more apparent in the examples in §6.

2. PRELIMINARIES

The focus of my thesis will be on social construction claims of one particular grammatical form. The claims that I speak of and reconstruct are social construction claims involving general terms (predicates). Thus I am setting aside singular social construction claims and their generalizations: for example, 'The United States Of America is socially constructed' and '(All) states are socially constructed' are not among the kinds of claims I am interested in, while 'Statehood is socially constructed' is among the claims I am interested in. All of the claims of interest are ones that are, when taken at face value, about properties. That class of claims cannot be characterized by their superficial grammatical form alone: consider 'Marriage is socially constructed'. This could be taken as meaning that the *institution of marriage* — in contrast with the two-place relation of marriage — is socially constructed, and on that reading it is not among my target claims.

In the next section, we are going to familiarize ourselves with other contemporary accounts of social construction and understand how mine is different from them. Earlier I stated that the truth is about the relationship or association between the predicate '*F*' and *the property of being an F*. So, to make my claim more intelligible my next step will provide some clarificatory facts about what I have in mind when I say 'property'. After this, we will look at an intuitive response to the question of what we might mean when we make social construction claims. The response is somewhat wrong but it does get something right. I take what it gets right and revise it to come up with reconstructed truth conditions for social construction claims. The idea of the reconstruction is that the relationship between a predicate and the property it expresses is socially constructed: '*F* is socially constructed' is reconstructed as the claim that the association between '*F*' (the predicate) and *the property F* is socially constructed in the sense of being highly sensitive to counterfactual variation in our social practises involving our use of the predicate '*F*'. What exactly I mean by this will get clearer in the following sections.

3. THE STATE OF THE ART

In this section I will survey the state of the art on the topic of social construction and explain how my project relates to it. My project, it will turn out, is somewhat orthogonal to the questions asked in the literature and more continuous with the metaphysics of naturalness in the Lewisian tradition (Lewis 1983) currently represented by Theodore Sider, Cian Dorr, and Andrew Bacon among others, to which I turn at the end of this section. While that literature is ostensibly about what is not socially constructed, an account of what is not socially constructed draws the same distinction as an account of what is socially constructed. I will begin with a review of the literature on social construction, focusing mainly on Ian Hacking and Sally Haslanger's works on social construction which I take to be representative of it. I will survey how that literature conceives social construction in various senses of the term, while making explicit how my reconstruction of social construction claims is different from those ways of thinking and what it adds to the conversation.

Ian Hacking in his 1999 book *The Social Construction of What?,* proposes that the right way to answer questions about social construction is not to form a consensus on the definition of social construction or to answer the question 'What is it to be socially constructed?'; rather the weight of this subject should be on its relevance. He urges us to ask, 'What's the point?' (Hacking 1999: 5). The offshoot of asking this question then is that a considerable amount of social construction talk revolves around the details of the causes and consequences of it. These details are what make social construction relevant for Hacking. Like most of the contemporary social constructionists', his work too is highly immersed in the implications of the 'social construction' label. In fact, the only cases of social construction that he finds that social constructionists think are worth debating about and exploring are those (whose implications/ that) need to be reformed.

Hacking is more focused on 'local claims' by which he means social construction of particular *X*s [2]. The details of the social construction of a particular *X* is discussed with the

[2] Note that Hacking is using '*X*' as a schematic letter (apparently) with the rule that '*X*' may only be replaced by an expression '*F*' if '*F* is socially constructed' is true. In any case, he is interested in only discussing socially constructed *X*s and exploring the causes and consequences of *X* being socially constructed. On the other hand, the '*F*' in my reconstruction of the claims of the form '*F* is socially constructed' may or may not

aim to raise consciousness about that *X*. This approach to social construction makes it so that the contents of discussion of the various socially constructed *X* s are distinct from one another. In this case he claims that one might be a social constructionist about some *X*s but not about other *X*s. He is in the business of discussing each *X* (for example - widowhood, reality, danger, etc.) separately with the aim to "raise consciousness" about each of them. This aim, according to Hacking, is what drives constructionists to make some socially constructed *X* their subject. (Hacking 1999: 6).

The following is how Hacking characterizes what most philosophers working on social construction believe about it -

> Social construction work is critical of the status quo. Social constructionists about X tend to hold that:
> (1) X need not have existed, or need not be at all as it is. X, or X as it is at present, is not determined by the nature of things; it is not inevitable.
> Very often they go further, and urge that:
> (2) X is quite bad as it is.
> (3) We would be much better off if X were done away with, or at least radically transformed (Hacking 1999: 6).

In (1), the contingency of *X* is highlighted. It could have been the case that *X* never came into existence because socio historical events and/or factors shaped things in a way that skipped creating *X*. Additionally, *X* could have existed but not in the same way as it does at present. Now, (2) and (3) are not something that must be true of socially constructed *X*. Hacking claims that by and large social constructionists tend to participate in discussions over the kind of *X* that they would like to "criticize, change, or destroy".

A paradigm case – gender. Following the De Beauvoir slogan 'One is not born one, but rather becomes, a woman', it then became obvious to most feminist scholars that gender is constructed. Due to inevitable distinctions between sexes, the term 'gender' was introduced.

> Let X = gender in (1)–(3) above. Feminists convinced us (1) that gendered attributes and relations are highly contingent. They also urged (2) that they are terrible, and (3) that women in particular, and human beings in general, would be much better off if present gender attributes and relations were abolished or radically transformed. (Hacking 1999: 7).

Now, inserting gender in this framework is not a difficult task. The main thesis of the early feminists was that biology i.e. sexes do not have definite associated genders. Some

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be socially constructed. I'm interested in whether F is socially constructed or not and what makes it so that it is or isn't socially constructed.

feminists also tend to think that 'gender is socially constructed' also implies that it is constructed in a way to display an apparent – inferiority of women and inherent nature of male dominance. Judith Butler takes a step forward and claims that we are gendered according to how we 'perform'. Her view is also rather extreme in that she insists that the way we live our lives determines what kind of body we have because it is a part of our lives. Somewhere down the line, it could also have the consequence that 'the distinction between sex and gender is no distinction at all'. Then there is Monique Wittig who believes that '[t]he entire set of sexual and gender categories should be overthrown. (According to Wittig) the lesbian is an agent of revolution because she lives out a refusal to be either man or woman.' (Hacking 1999: 19)

According to Hacking there should be no place for obvious social construction claims. This means, if everyone is aware that *X* is a contingent result of sociohistorical events and factors, then any constructionist project about it is futile[3]. We must discuss the social construction of an *X* if it meets the following precondition –

> (0) In the present state of affairs, X is taken for granted; X appears to be inevitable. (Hacking 1999: 12)

He gives us the example of a woman refugee. It seems inevitable if all the social elements like citizenship, immigration and women fleeing their nations are desperately asking for help from other counties. Constructionists believe that this concept, the social setting, related practices and even the material infrastructure is in fact not inevitable. (Hacking 1999: 12).

Revisiting the idea of a 'worthwhile social construction project' – Hacking is not denying that obvious claims about *X* means that *X* is not constructed. He is merely stating that it's not a worthwhile project. For example, 'Inventing Japan' does not pass this test because everyone knows that modern day Japan is a consequence of a variety of social and

[3] Hacking's talk of social construction has the aim of "raising consciousness" about the *X*s and so he thinks a project about *X*s that are obviously socially constructed is not worthwhile. My view does not take it so that a project about obviously socially constructed *X*s are futile because my reconstruction does not aim to "raise consciousness".

historical events and since those events are not inevitable, nor is modern day Japan (Hacking 1999: 12)

There are 2 types of things that can be constructed according to Hacking – ideas and objects. Let's talk about the former i.e. the 'idea-constructionist' project. There's nothing very exciting about the claim that the idea or concept of *X* is socially constructed. Obviously ideas that we have of anything follow from socio-historical events. But he identifies 3 'sticking points' that makes this part of his account worthwhile and philosophically interesting. The preferred example here is taken from natural sciences – a social constructionist view would take it that there could have been a different equally successful science that led us to something else and not quarks. Previous milestones in physics or the world itself do not determine exactly the next one. This is the first 'sticking point' – *contingency* (Hacking 1999: 32-33).

Another constructionist view is that how we classify things is not dependent on how the world really is. We choose these ways of thinking and sorting based on the route we happen to take and to make things convenient. An adversary of this view would say that the things we call 'facts' are the result of the inherent structure of the world and our discovery. The second 'sticking point' – *nominalism*. Scientists believe that discoveries like Maxwell's Equations, the velocity of light, etc. are backed with compelling evidence that makes them highly stable. On the other hand, constructionists believe that the stability is owed to 'factors external to the overt content of the science'. The third 'sticking point' – *stability*. Most genuine disagreement Hacking says emerges from one of these points (Hacking 1999: 33).

Stepping away from natural sciences, the way in which the social construction of human affairs is spoken about is different. Unlike the subjects of the former, people (the subjects of human affairs) can be aware of the labels put on them or the classification they seem to fit in. With time, people either remain classified as the same thing or don't. Sometimes this change depends upon themselves recognizing said classification and choosing to adapt to or pull away from it. The people who are classified and what they are classified as have the ability to interact. For example, I am classified as a student of philosophy – so the classification or kind of student of philosophy and I interact in a

certain sense. The latter can also undergo changes because the former have a different set of beliefs about themselves. This is called *the looping effect of human kinds* (Hacking 1995). Here we're starting to talk about objects (people). Sally Haslanger for one, is of the view that Hacking's account of object-constructionism has more to offer to metaphysicians than his account of idea-constructionism (Haslanger 2003: 309).

For the aforementioned 'looping effect' to occur, the interaction of the classification and the associated classified is required. The group of objects that can interact with their classification are given the name *interactive kinds* by Hacking (1999: 103). Interactive kinds are usually people that are of a certain kind. For example, children with ADHD or women refugees. 'Here I am concerned with kinds of people, their behaviour, and their experiences involving action, awareness, agency, and self-awareness. The awareness may be personal, but more commonly is an awareness shared and developed within a group of people, embedded in practices and institutions to which they are assigned in virtue of the way in which they are classified.' (Hacking 1999: 104). In contrast to this kind are the kind of objects that don't interact, they are indifferent to what they are called or how they are classified[4]. For example, quarks don't behave differently because they are called quarks. Of course, human interference through knowledge gained about them affects their behaviour but not in the way that is about the quarks awareness.

Now we know that when it comes to interactive kinds our schemes of classification don't merely paint a clearer picture of pre-existing groups or kinds of people, they are also dynamic in the sense that obviously Hacking, but also Sally Haslanger explains. Certain classifications are the way they are because of a 'feedback loop' that occurs when those who are classified and their classification interact. Haslanger calls this *discursive construction.*

> 'Discursive construction: if something is discursively constructed, it is the way it is to some substantial extent, because of what is attributed (and/or self-attributed) to it.' (Haslanger 1995: 99)

Here, Haslanger is not only interested in the looping effect but also the way in which people who are not in question treat those who are classified as *X*. For example, (without

[4] See Bird, Alexander and Emma Tobin (2018)

paying heed to how socially constructed 'coolness' is) in addition to me modifying my behaviour because I am seen as uncool because I want to be classified as the contradiction of that – 'cool', I also might change my behaviour towards those who are not classified as 'cool' or 'uncool' based on this entirely un-objective classification. I say un-objective because there is nothing inherently cool or uncool about anyone. These are only made up by various in-group patterns of behaviour and relations amongst people that are governed by social and historical events. So, these social factors are the cause of these classifications. This is another sense in which 'coolness' (or lack there-of) is socially constructed.

> 'Causal construction: Something is causally constructed iff social factors play a causal role in bringing it into existence or, to some substantial extent in its being the way it is.' (Haslanger 1995: 98)

Discursive construction is a kind of causal construction. I am socially constructed in the sense that I am the way I am (in some substantial manner) because of how I am classified as either "man" or 'woman', 'pretty' or 'ugly', 'smart' or 'intelligent' and the list could go on. But these distinctions are not dependent on what I am intrinsically, they are determined by social factors. Another way of looking at this is that not I, as a responder to these classificatory schemes, but all these classifications themselves are socially constructed. The determinacy of the use of these terms are based on social factors.

Classifications of human kinds like 'woman' and 'man', 'smart' and 'stupid', 'refugee' and 'resident', etc. owe their existence to us humans sharing various relations with one another. More often than not, these relations result in hierarchy which dictates the status quo. These distinctions for example, cool and uncool are not the indication of the intrinsic nature of people put in those categories, but they are distinctions that portray certain social relations. For whatever social and historical reasons, it became so that I could either be cool or uncool at any given place or time but this has nothing to do with what my intrinsic nature is but something to do with how I am socially related to other people in the in-group under consideration. Social forces can be influential in how we draw these lines of distinction and therefore, classify. That brings us to the next kind of construction – *pragmatic construction.*

> ‘Pragmatic construction: A classificatory apparatus (be it a full-blown classification scheme or just a conceptual distinction or descriptive term) is socially constructed just in case its use is determined, at least in part, by social factors.’ (Haslanger, 1995: 100)

There’s 2 types of pragmatically constructed distinctions – a distinction that’s use is only partially determined by social factors and so is weakly pragmatically constructed (for example – the distinction between man and woman); the other is a distinction that’s use is entirely determined by social factors and fails to represent accurately any ‘fact of the matter’ and so is strongly pragmatically constructed (for example- the distinction between cool and uncool) *(ibid.)*.

Let’s take another look at the ‘coolness’ example. A ‘cool girl’ is discursively constructed because she is the classified object and she interacts with the classification of ‘coolness’. The in-group knows that she’s cool, not just acting cool (because they acknowledge the difference). She’s cool because she behaves in a certain way and this behaviour is attributed to her intrinsic coolness as if the property of ‘coolness’ existed without any social kinds[5] Haslanger wants to debunk the belief that ‘there is a special quality of coolness that warrants the designation of cool’. So she says that ‘coolness’ when defined needs to make reference to social factors and so it is *constitutively constructed.*

> ‘Constitutively constructed: Something is constitutively constructed iff in defining it we make reference to social factors.’ (Haslanger 1995: 98)

So discursive construction and constitutive construction are intertwined in this example. A person is classified as cool and so they are discursively constructed, but what they are classified as is constitutively constructed.

So far, we have seen 2 (or perhaps more) approaches to social construction talk. The pattern that is usually employed in this subject involves a deeper dive into the surrounding phenomena – the reasons for the “social matrix”[6] being the way they are and how they affect *X* (given that *X* is socially constructed). Essentially, a branch of questions are being discussed and potentially answered. It goes beyond ‘what is social construction?’ or ‘what does it mean by *X* is socially constructed?’ to ‘what causes *X*?’, ‘Is *X* in need to be

[5] See Epstein, Brian (2018) "Social Ontology" for discussion on how social categories and kinds are set up.
[6] See Ch:1 of Hacking (1999) *The Social Construction of What?*

reformed?', 'what should we do in order to reform *X*', "what are the social factors involved in creating *X*?' and several more. Some (perhaps, most) philosophers are of the opinion that if those auxiliary questions are not discussed, then the spirit in which we address social construction claims is missing. Some are also of the belief that if we can't satisfactorily answer the question 'what's the point?' then we might as well, not bother ourselves with the project at all.

My intention in this thesis is to take a step back from the plethora of socially and politically driven arguments and definitions. The claim in this thesis is considerably divorced from the idea that the predicate *F* (or *X*) must produce a socio-politically relevant discussion in order for it to be worthy of being a social construction project. In what follows in this thesis, I will not be rejecting the aforementioned approaches towards social construction claims. Rather, I will be taking a different approach which is to describe a way of rationally reconstructing social construction claims that's charitable in the way that what we take to be intuitively true comes out true using my reconstruction and what we take to be clearly intuitively false comes out false. It is a project not very different from that of Tarski's in his paper "The Concept of Truth in Formalized Languages" (1933) where he proposes a definition of the notion of a true sentence and gives certain criteria that an adequate definition of a notion of a true sentence must meet. 'Socially constructed' is used by academics in many different fields as well as journalists and a lot of people who don't claim to be the authority on what is 'socially constructed' and what is not. This doesn't seem so different from the case of 'true'. Tarski was interested in a particular concept of truth that was implicit in how mathematicians used 'true'. They invoke it, as he pointed out, for specific theoretical purposes. For example, they want to say that certain axioms are true, that certain rules preserve truth, and they want to be able to ask whether (say) all the truths of arithmetic are among the theorems of a certain formal theory. Tarski provided "a method of constructing definitions of truth classical for quantificational formal languages"[7]. When this method is successfully applied to a certain formal language, the result will be that the sentences involving 'true' in the metalanguage that are intuitively true come out to be theorems, in particular sentences of the form " 'S' is true iff 'S'" where S is a sentence of the object

[7] Gómez-Torrente, Mario (2019: §2)

language. Similarly, I am attempting to provide a reconstruction of social construction claims that defines something we could mean when we make those claims while being intuitively satisfactory. The difference is he relied on his own intuitions about which sentences involving 'true' would be clearly true according to the mathematical use that he had identified. The concept of truth Tarski was reconstructing seems as 'theoretical' of a concept as anyone finds in academic literature that uses 'socially constructed'. The cases aren't different in that respect, although any pattern of use of 'socially constructed' on which we can zero in is inevitably much messier than the pattern of the use of 'true' that Tarski identified.

4. THE THEORETICAL BACKGROUND: HIGHER-ORDER METAPHYSICS

To make the preceding sections and my thesis about social construction more intelligible, I will now clarify the sense in which I use the word 'property' in this thesis. To do this, we will theorize in the language of Higher-Order Logic (HOL) which is a framework for reasoning with expressions (like connectives, predicates, operators, etc.) that do not take the position of a singular term in the way we reason with singular terms in first-order logic (Bacon 2017: 5). When I talk about properties in this thesis, this is meant to be shorthand for quantification into the position of a predicate in a higher-order language.
Let's look at the following examples of FOL expressions:

1. $\Box Fa$
2 $\exists x \Box Fx$

where *x* (a bound variable) takes the place of a singular term *a*. In HOL, we can also quantify into the position that the predicate (3) and the necessity operator (4) occupy in 1 as follows:

3. $\exists X \Box Xa$
4. $\exists X (XFa)$

In this section, I will introduce higher-order logic as a theory of properties and more generally of relations, and I will justify its use as such a theory in the context of my thesis. This exposition will mostly follow Andrew Bacon's works "The Broadest Necessity" (2018), *A Philosophical Introduction of Higher-order Logic* (Manuscript A) and Ch. 1 of Dorr, Hawthorne, and Yli-Vakkuri's *The Bounds of Possibility: Puzzles of Modal Variation* (forthcoming).

In all formal languages used in philosophical, mathematical, and linguistic theorizing, expressions are categorized in types. It is a way of generalizing and systematizing relationships between expressions in logic (Bacon 2017: 5). The type of an expression tells us what types of expressions can this expression be applied to and what type of expression can be the result of it. For example, the predicate "is short" would take

something with the type of a singular term like “Monica” and result in “Monica is short”. Similarly an expression can also take on the type of a sentence, a predicate, an operator, etc. The 2 most basic types in standard type theory are : *e* (the type of a singular term; it stands for *entity*) and *t* (the type of a well-formed formula; it stands for *truth evaluable*), and all of the types that can be constructed out of these by the → operation. So, *e* and *t* are types, and if *a* and *b* are types, so is (*a* → *b*) which represents an expression that takes in the type of *a* and results in an expression of type *b*.

In the FOL example (2) above, we have only given a variable to an individual i.e. quantified into the position that an expression of type *e* occupies. In FOL, there are more than just expressions of type *e* and *t.* For example, $e \rightarrow (e \rightarrow t)$ (identity), $t \rightarrow t$ (negation), $t \rightarrow (t \rightarrow t)$ (conjunction, disjunction, the material conditional, and the material biconditional). What makes it first-order is the fact that it only quantifies into the position of an expression of type *e*. HOL takes this one step forward by allowing quantification into the position of every type of expression and having variables of every type. In the above HOL example (3), *a* has type *e* and thus *X* has type $e \rightarrow t$. To further this illustration, we can also have a sentence like the following:

5. $\exists X(Fa \wedge X(F))$ (‘*a* is *F* and the property of being *F* has some property (of properties)’),

where the variable *X* has type $(e \rightarrow t) \rightarrow t$. (5) is similar to the result of a formalization of an argument like:

c is an electron
<u>The property of being an electron is natural</u>
c has some natural property

which we would formalize into:

Ec
$\underline{N(E)}$
$\exists X(Xe \wedge N(X))$,

where E and X have type $e \rightarrow t$ and N has type $(e \rightarrow t) \rightarrow t$. But, not everything that is 'natural' or 'unnatural' is combined with a single argument to produce something else (Bacon, Manuscript A: 19). In the English language there are transitive verbs like 'loves' and 'is married to' that take in multiple arguments. For example:

Loves: $e \rightarrow e \rightarrow t$.

Both 'loves' and 'is married to' are relational and the relation (of being married to for example) can be 'natural' or 'unnatural'. The argument would be the following:

Sarah is married to John
Marriage is not natural
Sarah stands on some unnatural relation to John

This argument, too, has a natural formalization in HOL, which is valid. It is the following:

Msj
$\neg N'(M)$
$\exists X(Xsj \wedge \neg N'(X))$.

Since M and X have type $e \rightarrow (e \rightarrow t)$, here N' has type $e \rightarrow (e \rightarrow t)) \rightarrow t$. This means that the predicate 'is natural' is not just of 1 type, but there are infinitely many 'naturalness' predicates of different types. 'Natural' is a property of a property of objects (or a property of a first-order predicate). This makes it a second-order predicate. Anything that is not a first order predicate is a higher order predicate. So, this property of type $e \rightarrow (e \rightarrow t)) \rightarrow t$ is a multi-place relation. Properties of objects that have type $e \rightarrow t$ are 1-place relations. 0-place relations have type t, which we call propositions or states of affairs. A relation is any entity of a type of the form $\sigma \rightarrow ... \rightarrow t$, and a predicate is any expression of a type of the form $\sigma \rightarrow ... \rightarrow t$.

So, a social construction claim is any claim of the form '*F* is socially constructed', where '*F*' is a general term, i.e. a predicate. That is meant in the sense of HOL, which means that '*F*' is any expression with a type of the form $\sigma \rightarrow ... \rightarrow t$. Below we will see some examples of social construction claims with '*F*'s of different types. We will see some examples of social construction claims with '*F*'s of different types later in this section.

Above, with the electron and marriage example, we saw how we formalize arguments about properties in HOL. The next step is to evaluate its validity and we can do this using tools from FOL. The electron and marriage example can be shown as valid by applying standard natural deduction rules to it (conjunction-intro followed by existential-intro). So, we can apply any sound proof system from FOL to HOL because the latter includes the former and can generalize the rules of the former to any variable and constant. The construction of models to show that an argument in HOL is not valid is also a fairly straightforward generalization of the semantics of FOL to all types (see Bacon 2018: Appendix A.1).

Here is an explanation of 3 reasons to adopt the higher-order approach to relations:

1. FOL, as we discussed earlier only allows for quantification into the position that an expression of type *e* occupies. So, if we quantify into the position of a property in FOL, we are treating expressions like 'the property of being old and wise' as expressions of type *e* and the 'has' in 'Socrates has the property of being old and wise' as two-place first-order predicate (type $e \rightarrow (e \rightarrow t)$). This produces difficulties that make it almost necessary to reject a first-order approach here. The issue is that the adoption of a first-order approach will run into a property-theoretic version of Russell's paradox (Bacon, Manuscript A: Ch. 5.2). To illustrate this let's look at a (naïve) theory of properties that resembles Frege's theory of extensions. Let *p*x be a variable binding operation that combines with a formula *φ(x)* to form a singular term (type *e*) *px.φ(x)* meaning *the property of being an x such that φ(x).* Also, let's postulate a binary relation *instantiates* which tells you an individual instantiates a property. So, Socrates instantiates *the property of being old and wise*. This must be subject to the law of naïve abstraction: *a* instantiates the property of being *φ(x)* if and only if *φ(a).* This can be formalized into:

$$I(a,px\varphi) \leftrightarrow \varphi(a)$$

Where *I* stands for the binary relation of instantiation. The reason we are compelled to reject this is that it is inconsistent. If φ is the formula '*x* doesn't instantiate *x'*, and if *a* is the property of not instantiating yourself (i.e. $px.\varphi$). This yields a contradiction that the property applies to itself only if it doesn't apply to itself. This can be formalized into:

$$I(px.\neg I(x,x),px.\neg I(x,x)) \leftrightarrow \neg I(px.\neg I(x,x),px.\neg I(x,x))$$

We can't reason about properties within the first-order approach without the inclusion of something like the naïve abstraction law. However, we can't accept this due to the inconsistency aforementioned. Debates within the first-order approach tend to be exclusively devoted to devising a consistent theory of properties. The debate has not led to one wide consensus on a way to do away with this inconsistency or curb it. The result of this is that advocates of first-order theories of properties are not spending much their time applying their theories in metaphysics (Bacon, Manuscript A: 94).

2. My approach to social construction cannot get off the ground without the higher-order approach The expression that replaces '*F*' in '*F* is socially constructed' may be any type of predicate. One can intelligibly raise questions like:

Is *heterosexuality* socially constructed? (type $e \rightarrow t$)
Is *truth* socially constructed? (type $t \rightarrow t$)
Is (*numerical) identity* socially constructed? (type $e \rightarrow (e \rightarrow t)$)
Is *naturalness* socially constructed? (type $(e \rightarrow t) \rightarrow t$)

My reconstruction of the social construction claim at issue in each of these questions will involve quantification into the type σ displayed in parentheses on the right of the question, and in particular it will require being able to rely on naive property abstraction. But we just saw that naïve property abstraction is inconsistent when formalized in a first-order language, so that is not an option. In higher-order logic we can take naïve property abstraction to be formalized by:

$(\lambda x.\varphi)a \leftrightarrow \varphi(a)$,

which is valid in classical higher-order logic[8].

3. We can avoid getting bogged down in difficult problems in the semantics of natural languages by adopting the higher-order approach. I have been talking as if 'the property of being old and wise' were a complex predicate of type $e \rightarrow t$, and thus as if 'property' were very different from an ordinary count noun like 'table' (which has type $e \rightarrow t$). But this is very far from clear[9] and from a higher-order point of view it can remain unclear without affecting the clarity of my thesis. I have simply adopted a convention of using certain English sentences as proxies for their natural formalizations in HOL, so that when I write, for example:

(S1) Socrates has a property,

you know that I mean to be understood as if I had instead written:

(S2) $\exists X(Xs)$,

where s formalizes 'Socrates'. It makes no difference whether (S1) and (S2) have the same meaning, nor whether (S1) even involves any higher-order quantification. All that matters is that you, the reader, know I mean to assert (S2). In using natural language sentences as proxies for certain HOL sentences and taking higher-order quantification as primitive, I am following the mainstream in contemporary higher-order metaphysics[10]. Here is a recent representative example:

[8] Classical higher-order logic was introduced by Church (1940). It generalizes the rules and axioms of first-order logic to all types and adds to them the rules of the λ-calculus: Alpha, Beta, and Eta-Equivalence. The expressions $(\lambda x.\varphi)a$ and $\varphi(a)$ are Beta-equivalent, so may by Beta-Equivalence be substituted for each other anywhere. $(\lambda x.\varphi)a \leftrightarrow \varphi(a)$ then follows from a theorem of classical logic $(\varphi(a) \leftrightarrow \varphi(a))$ by Beta-Equivalence. See Bacon Manuscript A: Ch. 3.3

[9] Bacon (Manuscript A: 94) seems to think that 'is abstract' in 'Some property is abstract' has type $e \rightarrow t$. If this is so, 'property' also has type $e \rightarrow t$, since 'some' has type $(e \rightarrow t) \rightarrow ((e \rightarrow t) \rightarrow t)$.

[10] Bacon (Manuscript A: §5.5) and Dorr, Hawthorne, and Yli-Vakkuri (forthcoming: Ch. 1) explicitly adopt conventions according to which certain English sentences are 'proxies' for certain HOL sentences while explicitly refusing to take any position on the meanings of those English sentences.

> While we will pronounce ∃X(◇X(Socrates)) as 'There is a property that Socrates could instantiate' when we are speaking loosely, we do not claim that it is equivalent to the ordinary English meaning of that sentence, and we certainly do not want to regard the formal sentence as being introduced by the stipulation that it is equivalent to that English sentence. [...] Rather, like Williamson, we think that the language of higher-order logic can be learnt by the "direct method" without taking a stand on how it relates to ordinary language. And we think that it is a very good language for metaphysicians to know, since it can be used to raise many interesting and precise questions while avoiding a whole panoply of metaphysically uninteresting puzzles that ordinary loose talk of "properties" seems to present us with when taken at face value. In taking the higher-order approach, we take no position on what such talk means when it is not treated as a shorthand for higher-orderese (Dorr, Hawthorne, and Yli-Vakkuri forthcoming: §1.2).

It's worth noting that in this last respect HOL is no different from FOL. Philosophers regularly use FOL for expressing generalizations about objects. For example, natural language seems to have no expression that works like the first-order quantifier $\exists x$. We formalize,

(S3) Something is old and wise

as

(S4) $\exists x(Ox \wedge Wx)$

and when we do so we do not worry about whether (S4) is true to the meaning or logical form of (S3). Like HOL, FOL is learned by immersion or the 'direct method' (Williamson 2003: 459), and when we use FOL to express generalizations about objects, there is no need to take a position on whether those generalizations can be expressed in natural language. As long as the reader understands that (S3) is being used as a proxy for (S4), the actual meaning of (S3) is irrelevant.

We are so used to using FOL in philosophical writing that it is easy for us to forget that there is no compositional mapping from English sentences to the FOL formulas that are used to thinking of their formalizations, nor back to English from those formalizations. For example, we cannot compositionally translate 'something' into $\exists x$ and 'is wise' into W, since then we would have to translate 'Something is wise' into the ungrammatical string

$\exists xW$. Nor can we compositionally translate 'is wise' into Wx: That would get 'Something is wise' right but it would get 'Socrates is wise' wrong (Wxs). We can see that syntactic ambiguity is the reason that there is no algorithm for translating from natural languages to FOL (or HOL). What we do in formal logic is introduce parentheses, type subscripts, etc. which disambiguates the syntax making it so that there can be an algorithm of translation from natural languages to FOL or HOL. This is what Montague gets at in his 'English as a Formal Language'[11] and other works on natural language. Possibly with a few exceptions, we could have a literal translation into HOL that are word for word or 'direct compositionality' (see Barker and Jacobson 2011). For example, the natural translation for 'has' in the context 'Socrates has some property' is 'λx. $\lambda Y. Yx$' where x has type e and Y has type $e \rightarrow t$. The natural translation for 'and' in the context 'old and wise' is '$\lambda X. \lambda Y. \lambda$z. ($Xz$ & Yz)' where z has type e and X and Y have type $e \rightarrow t$. However, in FOL, it's evident that the trio of expressions 'something', 'is wise', and 'Socrates' does not translate into anything in FOL and conversely, the trio $\exists x$, W and s does not translate into anything in English. This doesn't stop us from effortlessly going back and forth between 'Something is wise' and $\exists xWx$ and between 'Socrates is wise' and Ws. We take this as rudimentary while learning the basics of FOL. That they are easy to forget is a testament to the effectiveness of the 'direct method' in learning FOL. If the 'direct method' works for FOL, it should work for HOL. The other reason why HOL should be learned by the 'direct method' is that translations in the other directions, i.e. from HOL or FOL to natural languages, works differently. While there are compositional FOL to natural language translations there are arguably no compositional HOL to natural language translations. I agree with all philosophers like Williamson, Bacon, Dorr, Dorr-Hawthorne-Yli-Vakkuri, etc. who think this is no obstacle to learning the language. But, however that may be, we don't use the parts of the language of HOL that can't be compositionally translated into English when we formalise English 'property' talk in this thesis.

[11] See Montague (1970a)

5. ARBITRARY BOUNDARIES

The following is a natural way to respond to someone who asks, 'What do you mean by the social construction claim?' regarding soup (to take a particularly clear case).

> *The classification of everything into things that are soups and the rest (things that are non-soups) depends on our social practices. So, governed by our social practices there is an arbitrary boundary created between soups and non-soups. I say 'arbitrary' because this boundary could have very easily been drawn slightly differently, and that would have made no practical difference. Take the example of gazpacho and the virgin mary (a non-alcoholic bloody mary). The former we call a soup, while the latter we do not, although they are both tomato-based, cold, savoury drinkable purées. This means that the classification has nothing to do with how these two things are intrinsically, but is entirely dependent on our social practices. The answer to the question "Why is gazpacho a soup and the virgin mary not?" is that, for some reason during the history of humans, we decided to draw the boundary there. It could have easily happened that we drew the boundary such that both gazpacho and the virgin mary were not soups or both of them were soups. Since our social practices decided where to draw this boundary, it is socially constructed.*

Let us call this the *unreflective answer*. One thing that the unreflective answer is getting wrong is that our social practices do not draw the boundary between soups and non-soups. What they draw is the boundary between the things that are in the extension of 'soup' and everything else -- by associating a particular property with 'soup'. For that very reason, the unreflective answer is not entirely wrong: our social practices do draw an arbitrary boundary, namely the boundary between the extension of 'soup' and its anti-extension.

This kind of arbitrariness is to be contrasted with metaphysical arbitrariness, which amounts to the boundary between the extension of a *property* (as opposed to a predicate) and its anti-extension being highly unnatural in the Lewisian sense. There may be interesting connections between the two varieties of arbitrariness, but they will not be explored in this thesis.

6. SOCIALLY CONSTRUCTED BOUNDARIES

The master argument

Let's talk about the logical form of a social construction claim. We established in section 4 that the '*F*' in '*F* is socially constructed' may be a predicate of any type σ. So, a simple step forward from that is the hypothesis that 'is socially constructed' is a predicate of type $\sigma \rightarrow t$. And if that is true then, being socially constructed is a property of relations – effectively those would be infinitely many properties, one of each type of the form $\sigma \rightarrow t$ where σ is the type of some relation. So, in the simplest form, where '*F*' is a predicate of type $(e \rightarrow t.)$ 'is socially constructed' is a predicate of type $(e \rightarrow t) \rightarrow t.$ So, in the simplest case , where '*F*' is a predicate of type $(e \rightarrow t)$ 'is socially constructed' is a predicate of type $(e \rightarrow t) \rightarrow t.$ We will now explore an argument that will express that this cannot be right.

Consider the *Planck length* ℓ_P, which is the distance light travels in one unit of Planck time. If the negation of any social construction claim is clearly true, then this is:

(P) It is not the case that ℓ_P is socially constructed.

The boundary between things that are 1 ℓ_P in length and things that are not is not intuitively at all arbitrary or dependent on our social practices: it is the fundamental unit of size in physics, and it is definable in terms of other fundamental physical constants (the speed of light in a vacuum, the gravitational constant, and the Planck constant). However, we also know that

(P=M) $\ell_P = 5.72938 \times 10^{-35}$meters.

If 'is socially constructed' is a predicate of type $(e \rightarrow t) \rightarrow t$ then by basic logic[12] it would follow that:

[12] Again the natural deduction system in Halbach (2009/2010) suffices: in a one-line proof using =-elimination, we can derive the biconditional (P) ↔ (M) from the tautology (P) ↔(P).

(M) It is not the case that 5.72938×10^{-35} m is socially constructed.

But without question (M) is false. If any social construction claim is clearly true, then this is: the 'meter' is socially constructed. The difference between things that are *n* meter in length and the things that are not *is* intuitively arbitrary and highly dependent on our social practices. Our social practices pick out a certain Parisian platinum bar that has no significance in fundamental physics as the paradigm object that is 1 m long, and they define meter as the length of that object. Our social practices could easily have picked out another paradigm object, and they could even more easily have made that same paradigm just a bit longer or shorter than it actually is. And for the same reason why *n* meter is socially constructed, so is ¼ meter, and 5.72938×10^{-35} meter[13].

The appropriate conclusion here is not that 'is socially constructed' in (P), (P=M), and (M) has some type other than $(e \rightarrow t) \rightarrow t$. Rather, what this argument shows is that 'is socially constructed' behaves like 'is so called because of his size'--an expression that must be paraphrased away before identity elimination or other logical rules can be applied to sentences in which it occurs. Let's consider the analogy in the introduction in detail. 'is so called because of his size' appears to be a predicate of type $e \rightarrow t$. But it cannot be: if it were, then from the fact that Giorgione = Barbarelli and the further fact that

(G) Giorgione is so called because of his size,

it would follow by basic logic that

(B) Barbarelli is so called because of his size.

[13] Recall the importance of distinguishing between counterfactual instability and variation in meaning over time or between speakers or communities of speakers. 'Meter' is highly stable over time and amongst different communities and individual speakers. It has the same meaning in British, Indian, Australian and Canadian English. Since the introduction of the term, it has had no other meaning and it may never have any other meaning. Nevertheless, *at all times* since its introduction it could have had various different meanings because a Parisian bar that is slightly longer or shorter could have easily been picked to be the paradigm object for 'meter' at the time of the introduction of the word.

And yet (B) is false. It's starting to get clearer what's going on. (G) says something about the relationship between the name "Giorgione" and the man Giorgione, and what it says about it is true. (B) says something about the relationship between the name "Barbarelli" and the man Barbarelli, and what it says about it is false. What these sentences say about that relationship can be made explicit by paraphrasing them into:

Giorgione is called "Giorgione" because of his size.
Barbarelli is called "Barbarelli" because of his size.

These paraphrases give rise to no logical anomalies: both

Barbarelli is called 'Giorgione' because of his size

and

Giorgione is called 'Giorgione' because of his size

are true. Similarly, the apparent failure of basic logic involving (P) and (M) is due to the fact that (P) says something true about the relationship between 'ℓ_P' and ℓ_P while (M) says something false about '5.72938×10^{-35}m' and 5.72938×10^{-35}m.

If the above analogy holds, we should be able to produce logically well-behaved paraphrases for social construction claims, just like we are for (G) and (B). The crux of this thesis is that we are able to do so. I will do so in two stages. First, will paraphrase '*F* is socially constructed' as:

The relationship between '*F*' and *F* is socially constructed.

Then I will provide an account of what it is for the relationship between a predicate and a relation to be socially constructed.

So, when '*F*' is a predicate of any type σ, '*F* is socially constructed' is paraphrased as a sentence that results from applying a predicate SC of type $e\rightarrow(\sigma\rightarrow t)$ to "*F*" (the

quote-name of '*F*', which is of type *e*) and '*F*' to form a sentence '*SC('F',F)*'. Thus, the examples from section 4 become:

SC('heterosexuality', heterosexuality) ('*S*C' has type $e \rightarrow ((e \rightarrow t) \rightarrow t))$

SC('truth', truth) ('SC' has type $e \rightarrow ((t \rightarrow t) \rightarrow t)$

SC('=', =) ('SC' has type $e \rightarrow ((e \rightarrow (e \rightarrow t)) \rightarrow t))$

SC('naturalness', naturalness) ('SC' has type $e \rightarrow (((e \rightarrow t) \rightarrow t) \rightarrow t)$

And there is no more logical anomaly: (P) becomes:

$\neg SC(\text{'}\ell_P\text{'}, \ell_P)$,

while (M) becomes:

$\neg SC(\text{'}5.72938\times10^{-35}\text{m'}, 5.72938\times10^{-35}\text{m})$

The former can be true and the latter false even when $\ell_P = 5.72938\times10^{-35}$m. Furthermore, just like in the case of 'so called…', it does follow that

$\neg SC(\text{'}\ell_P\text{'}, 5.72938\times10^{-35}\text{m})$,

and

$\neg SC(\text{'}5.72938\times10^{-35}\text{m'}, \ell_P)$.

The second stage is a little less straightforward. What is it for the relationship between a predicate and a relation to be socially constructed? Before we move on, I would like to begin by noting that we cannot have a meaningful disagreement about the correct answer to this question. In this thesis, the construction 'The relationship between '*F*' and *F* is socially constructed' means just what I state it means. When I state what it means, we can agree or disagree about how good the resulting reconstruction of social construction claims are. It should be good insofar as it reconstructs intuitively true social construction

claims as truths and intuitively false social construction claims as falsehoods. However, what the reconstruction means cannot be disagreed upon because it is something I stipulated.

In section 5, we concluded that the boundaries in the unreflective answer are socially arbitrary boundaries and that is what the answer gets right. The way to save the rest of the answer is by replacing the talk of things that are soups and non-soups with talk of things that are in the extension of 'soup' and everything else. The first boundary (which is metaphysically arbitrary) is (or is represented by) a function from worlds to sets of individuals, which humans had no role in bringing into existence. The second boundary (which is socially arbitrary) is created by an association between a predicate and a property, which humans had a lot to do with bringing into existence. The best rational reconstruction of 'social construction' talk, I suggest, is this: soup is 'socially constructed' in the sense that the association between 'soup' (the predicate) and *soup* (the property) is socially constructed.

One might say that the association between every predicate and property is socially constructed in some way. But I mean 'socially constructed' here in a highly rarefied sense, in which the association between a predicate and a property is socially constructed if and only if it is highly unstable under counterfactual variation in our use of the predicate. Let's look at something different from 'soup' – 'gold'. There is a sense in which our social practices involving the use of 'gold' bring it about that 'gold' expresses the property *gold*. But this association is much less dependent on those social practices – and much more dependent on our natural environment – than the association between 'soup' and *soup*. Recall that the boundary between the extension and anti-extension of 'soup' could have easily been drawn in a different way. For example, if the culinary authorities jointly agreed that 'All soups are served hot', then 'soup' would have been associated with a different property, one that both the gazpacho and the virgin mary would have lacked. On the other hand, if scientists arrived at a consensus that 'gold is a compound', this would not have resulted in an association of 'gold' with a different property. It would still be associated with *gold*. What could plausibly account for the difference is that there is a *highly eligible* property, with no close competitors, in the vicinity of our use of 'gold', while there are a plethora of very similar, highly ineligible properties in the vicinity of our use of 'soup', where none of them stands out except in virtue of our use of 'soup'. If we adjust the pattern

of use just a bit in the case of 'soup', and we easily associate a different property with 'soup'. That is what the social construction of the association between 'soup' and *soup* amounts to in the rarefied sense.

A (cautionary) note: according to certain theories of vagueness (such as that defended by Williamson 1994), every vague predicate, and hence pretty much every predicate, could easily have expressed a different property if our social practices involving its use had been different. Keeping that aside, in this thesis the phrase 'highly unstable under counterfactual variations in use' should be understood as a succinct version of 'highly unstable under counterfactual variations in use over and above any instability introduced by vagueness'.

The crux of my rational reconstruction is that F is socially constructed insofar as the association between the predicate *'F'* and *the property of being F* is socially constructed. And being socially constructed has to do with the stability of said association under minor counterfactual variations in our social practices involving our use of the predicate. This can be unpacked into:

> *F* is socially constructed iff the association between '*F*' and *F* is highly sensitive to counterfactual variation in our social practises involving our use of the predicate '*F*'.

Or, equivalently (or close enough to equivalently):

> *F* is socially constructed iff it is not the case that if our social practices involving the use of '*F*' would have been slightly different, then '*F*' would have still picked out the same property.

Consider, for example, the following claim:

(P) Planethood is socially constructed.

According to my reconstruction, (P) is highly plausible. Our use of the predicate 'planet' changed in 2006 when the International Astronomical Union (IAU) formally defined the term. Plausibly, this definition made it so that Pluto was no longer in the extension of

‘planet’, not by stripping Pluto of its planethood, but by associating a new property with ‘planet’. If so, what brought about that association of predicate with property was a minor change in our social practices involving the predicate: a group of expert speakers issued a declaration, and the rest of us, whether we knew about the declaration or not, continued to defer to their usage. And since this in fact happened, then clearly the association between ‘planet’ and *planethood* is highly sensitive to counterfactual variation in our use of ‘planet’, since that association was *actually* created by a small change in our use of ‘planet’. In contrast to that, let’s consider a similar scenario involving ‘gold’, in which the gold experts of 1500 AD issue a joint declaration: ‘Gold is not an element’, and the rest of us go on to rewrite our natural philosophy textbooks and dictionaries accordingly. (This scenario is not very far off from reality: around 1500 AD many if not most of the people who were considered as experts on gold thought that gold was a compound.) Supposedly, we can say that the experts would have simply been making a mistake, and that the rewritten textbooks and dictionaries would have been likewise mistaken and would have been corrected with the discovery of the periodic table. Thus ‘Gold is socially constructed’ comes out false on my reconstruction, which is exactly the result we are looking for.

7. SOCIAL CONSTRUCTION AND SIDERIAN SUBSTANTIVITY

The reconstruction of the social construction claim I have presented is inspired by Ted Sider's (2011: Ch. 4) notion of substantivity. Following Lewis (1983), Sider assumes that the correct interpretation of a language is the one that strikes the best balance between maximizing *fitting use* and maximizing *naturalness* (of semantic values). Roughly speaking, fitting use amounts to interpreting speakers of a language in a way that makes the sentences they accept to come out as true, except in cases of explicable error. Maximizing naturalness amounts to maximizing the naturalness of the properties that are semantic values of their predicates. Although the notion of a natural property is extremely difficult to make explicit[14], it nevertheless seems clear enough to do the kind of significant theoretical work it does in Sider's account of "substantivity". There are clear paradigms: *electron* is extremely natural, *hydrogen* still highly but less natural, *water* is less natural still, and *philosopher, bachelor*, and *soup* are extremely unnatural. There are cases in which the only properties that come close to being good candidates for use-fitting are extremely and equally unnatural. In such cases, use-fitting prevails – slight differences in our use of a predicate would have resulted in the predicate having another property as its semantic value. And in just such cases questions of the form 'Is *x F*?' are not substantive. Sider's idea is that a question is substantive if and only if it could not easily have had a different answer (while all the other underlying facts remained the same) owing to some of its constituent predicates having different semantic values due to minor differences in use in the presence of a multiplicity of equally natural candidate semantic values. Thus, for example, 'Is gazpacho a soup?' turns out to be a non-substantive question, and 'Is gold an element?' turns out to be substantive.

Recall, that soup (according to my reconstruction of social construction) is highly socially constructed while gold is very slightly socially constructed. So, the relationship between my notion of social construction and Sider's notion of "substantivity" seems very straightforward. The explanation can be something like this - the relationship between '*F*' and *F* is socially constructed if and only if there is at least one (in Sider's sense) non-substantive question of the form 'Is *x* an *F*?'. I won't get into whether that is always true or

[14] See Dorr and Hawthorne 2013 for discussion.

not. But even if we were to assume that it is in fact the case that that is always true, we do not need to do so for my notion of social construction to work. It is not necessary to accept the kind of meta-semantics that Lewis and Sider present in order to accept my notion of social construction. It is just a clear fact, I take it, that the relationship between 'gold' and *gold* is highly stable under counterfactual variation in the use of 'gold' while the relationship between 'soup' and *soup* is highly unstable under counterfactual variation in the use of 'soup'. Whether the ultimate explanation of this phenomenon is in terms of the extreme naturalness of *gold* and the extreme unnaturalness of *soup* is a question I don't need to deal with right now. One advantage of my reconstruction of social construction claims over one that makes use of Siderian meta-semantics is that mine does not use any controversial theoretical notions--in particular, it makes no use of the notion of naturalness. My reconstruction can be spelled out entirely using ordinary counterfactual conditionals and standard semantic notions (in particular the notion of a predicate expressing a property), and the notion of 'easy possibility' (the notion of what could easily have been the case). To be fully explicit, my reconstruction replaces '*F* is socially constructed' with 'There is a state of affairs *p* such that (i) *p* concerns our social practices involving the use of '*F*', (ii) *p* could easily have obtained, and (iii) if *p* had obtained, then '*F*' would have expressed a property different from the one it actually expresses'.

Note, however, that, even if we make no assumptions about how my notion of social construction is related to Sider's notion of "substantivity", we will have to conclude that my notion, like Sider's, is gradable (Sider, 2011:Ch. 4). Since stability under counterfactual variation in the use of a predicate comes in degrees, so does the social construction of the relationship between a predicate and the property it expresses. For example, the relationship between 'planet' and the property *planet* is presumably somewhat less socially constructed than that between 'soup' and the property *soup* while being much less socially constructed than that between 'gold' and *gold*.

In this connection it is also worth noting why one especially simple reconstruction of social construction claims that makes use of the notion of naturalness won't do: *F* is socially constructed iff the property of being an *F* is highly unnatural (or falls below some specified degree of naturalness). Consider the property of being one nanometre long vs. the property of being *n* Planck units long, where one nanometre = *n* Planck units. Pretheoretically, we want to say that the property of being one nanometre long is socially

constructed while the property of being *n* Planck units long is not. After all, pre-theoretically, and in line with the unreflective answer, how long a nanometre is determined by how long a meter is, and how long a meter is, is determined by our social practice of selecting a platinum bar as the standard meter, whereas we could easily have selected a platinum bar of a slightly different length to serve as the standard meter, and in this way our social practices serve to draw an arbitrary boundary between the things that are one nanometre long and the things that aren't. In contrast -- again, pre-theoretically speaking and in line with the unreflective answer -- how long a Planck unit is, is determined by three fundamental physical constants (the speed of light, the Planck constant, and the gravitational constant), and thus the boundary between the things that are n Plank units long and the rest is not at all an arbitrary boundary drawn by our social practices. It should be clear where this pre-theoretical reasoning goes wrong. After all, being one nanometre long and being *n* Planck units long are one and the same property, so, by Leibniz's law, it cannot be that one is socially constructed while the other isn't. In fact, what this case illustrates very clearly is why we have to construe social construction claims as implicitly metalinguistic. There is no difference between being one nanometre long and being *n* Planck units long (they are the same property), but there is a difference between the relationships in which 'is one nanometre long' and 'is *n* Planck units long' stand to that same property. In the former case the relationship is highly sensitive to counterfactual variations in our social practices involving the use of the predicate, while in the latter case it is not.

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